



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,792	03/05/2002	Takeshi Yoshimura	220298US2	2961
22850	7590	05/22/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			LEVITAN, DMITRY	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	
			2616	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,792	Applicant(s) YOSHIMURA ET AL.	
	Examiner Dmitry Levitan	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The drawings are objected to because Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

The drawings are objected to because of typographical error in S704 of Fig. 7.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because it is too long. Correction is required. See MPEP § 608.01(b).

Art Unit: 2616

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The disclosure is objected to, because abbreviations or acronyms RED, RIO, IMT-2000 are cited throughout the specification without explanation. Applicant should provide a full explanation for the acronyms at least at their first occurrence in the specification.

Claim Objections

5. Claims 9-26 are objected to because of the following informalities: claims limitations “QoS class not specified for data type packets” are understood in the light of disclosure, identifying this class as a class for real time packets, like video and audio on page 9. However, the selected terminology of this limitation is confusing, because QoS classes specified for real time packets are well known, for example in ATM, and therefore referring to real time packets as belonging to “QoS class not specified for data type packets” is misleading. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-20, 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2616

Claim 1 limitation “to decompress the original packet in each QoS class” is unclear in the context of the claim, because it is not understood why the packet needs decompression at the receiving as it was not compressed at the transmission.

Claim 1 recites the limitation "the original packet" in line 25. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 limitation “the queued packet to be transmitted is divided into plurality of the data units only when there is no data unit.” is unclear because it is not understood if this limitation/condition is directed to the process of transmitting packets or to the process of dividing packets.

Claims 7, 9, 11, 13, 15 and 17 limitation “an assembling part for assembling in each of QoS classes the data units that belong to one of the QoS classes not specified for data packets and are some of the received data units” is unclear because it is not understood what “some of the received data units” means in the context of the claim.

Claims 13, 15 and 17 limitation “to decompress the original packet” is unclear in the context of the claim, because it is not understood why the packet needs decompression at the receiving as it was not compressed at the transmission.

Claims 7, 9, 11, 13, 15, 17, 23, 25 and 26 limitation “applying a receiver side retransmission control process in each Qos class to the data unit that belongs to one of the Qos classes” is unclear, because it is not understood if the retransmission process is applied to all Qos classes or to one.

Claims 7 and 19 limitation “applying a transmitter side retransmission control process in each Qos class to the data unit that belongs to one of Qos classes” is unclear, because it is not understood if the retransmission process is applied to all Qos classes or to one.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-8, are rejected (as best understood) under 35 U.S.C. 103(a) as being unpatentable over Olsson (US 6,577,596) in view of Admitted Prior Art (Background of Invention, pages 1-5).

Olsson substantially teaches the limitations of the claims:

A packet transmission method, system and apparatus for transmitting packets classified per QoS requirement from a transmitting node to a receiving node (inherently part of the system, because Olsson system operates in a communication network, comprising numerous transmitting and receiving nodes 1:12-27, wherein a transmitting node is shown on Fig. 2 and 3, 6:62-7:46), comprising:

selecting sequentially a QoS class (processing sequential packets 211 and 212 of Fig. 2 to an appropriate queue 221-224 for storage, according to the packets time sensitivity 6:62-7:3 or QoS information 7:22-30),

Art Unit: 2616

Compressing the headers of the packet (compressing the header of an IP packet, as header of the packet compression can be performed at various stages 6:4-47, as performing the header compression before or after fragmentation has certain advantages and disadvantages 4:5-20 and 7:47-56),

dividing a queued packet of the selected class into a plurality of predetermined data units (dividing long packet 213 into fragments 213a-c, shown on Fig. 2 and 4, 7:7-17),

and transmitting the packets (sending packets by process 231 according to the packet priority 7:39-46 to transmit queue 232 on Fig. 2 for transmission to link 233),

receiving and decompressing fragments to restore the original packet (inherently part of the system, because the operation of the restoration of the original packet at the receive node is essential for the system operation).

In addition, Olsson teaches packets associated with real time communication, like speech or video and other type packets with different time sensitivity 6:65-7:14 and does not recommend retransmission of real time data 3:61-63.

Olsson does not teach retransmission control process for data type packets.

Admitted Prior Art teaches retransmission control process (retransmitting packet lost at transmission on the basis of QoS class, pages 3:34-4:21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add retransmission control process of Admitted Prior Art, applied to the non-real time packets to the system of Olsson to improve the system error rate for the non-real time packets and avoiding time delaying retransmission for the real-time packets.

Art Unit: 2616

In addition, regarding claims 7 and 8, Olsson teaches an apparatus, wherein functions of dividing, compressing, scheduling, etc, as disclosed above, are implemented in software modules/layers 4:48-54.

10. Claims 9, 10, 15, 16, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Admitted Prior Art in further view of Jorgensen (US 6,452,915).

Olsson in view of Admitted Prior Art substantially teaches the limitations of claims 9 and 10 (see claim 1 rejection above), including pre-scheduling part for packets classification 215, dividing part for fragmenting the queued packets LFI 220 and scheduling part for selecting packets for transmission 231 and giving priority to real time packets.

Olsson in view of Admitted Prior Art does not teach two separate pre-scheduling parts and two separate dividing parts for real time and data type packets and classifying the retransmitted packets.

Jorgensen teaches classifying the retransmitted packets by keeping the transmitted packets in the queues for retransmission, as shown in Fig. 15B and 64:24-36.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate pre-scheduling and dividing parts in two portions, dedicated for real time and data type packets and add classifying the retransmit packets of Jorgensen to the system of Olsson in view of Admitted Prior Art as obvious design choice to improve the system speed and handling of real time packets by processing packets in parallel, assigning a separate path for real time packets and giving proper priority to retransmitted packets.

See *Nerwin v. Erlichman* 168 USPQ 177.

Art Unit: 2616

In addition regarding claims 15, 16, 21 and 22, retransmission control process of Admitted Prior Art inherently teaches transmission side and receiving side retransmission control parts, wherein the receiving part generates a request indicating a missing packet, because these parts and request are essential for the retransmission process. Admitted Prior Art also teaches applying the retransmission process to all QoS classes on page 4.

11. Claims 11-14, 17-20 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olsson in view of Admitted Prior Art in further view of Jorgensen (US 6,452,915).

Olsson in view of Admitted Prior Art substantially teaches the limitations of claims 9 and 10 (see claim 1 rejection above), including pre-scheduling part for packets classification 215, dividing part for fragmenting the queued packets LFI 220 and scheduling part for selecting packets for transmission 231 and giving priority to real time packets, inherently comprising transmitting all type of packets, including real time and data type.

Olsson in view of Admitted Prior Art does not teach classifying the retransmitted packets.

Jorgensen teaches classifying the retransmitted packets by keeping the transmitted packets in the queues for retransmission, as shown in Fig. 15B and 64:24-36.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add classifying the retransmit packets of Jorgensen to the system of Olsson in view of Admitted Prior Art to improve the system handling of real time packets by giving proper priority to the retransmitted packets.

In addition regarding claims 13, 14, 19 and 20, retransmission control process of Admitted Prior Art inherently teaches transmission side and receiving side retransmission control parts, wherein the receiving part generates a request indicating a missing packet, because these

Art Unit: 2616

parts and request are essential for the retransmission process. Admitted Prior Art also teaches applying the retransmission process to all QoS classes on page 4.

In addition, regarding claims 17 and 18, Olsson teaches a node 200 inherently comprising transmission and receiving, because it is an Internet node performing by-directional communication applications, like VoIP 1:12-27.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7529. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
Examiner
Art Unit 2616